Swedish University of Agricultural Sciences
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Financial Sustainability of Microfinance

A Zero Default Case Study of the Chanthaburi Province Savings Group

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Summary

Apart from poverty alleviation which is the prominent mission of microfinance institutions (MFIs), MFIs also need to maintain their financial sustainability to assure that they will have working capital in the next period. “Repayment rate” is a common indicator used to measure financial sustainability of MFIs. The aim of this study is to investigate the significant factors affecting the level of repayment rates, using the Chanthaburi Province Savings Group (CPSG), a best practice MFI with a high repayment rate in Thailand (www, Prachathai, 2011), as the case study. Data used in this study is from three sources: the CPSG’s documents, an interview, and observation.

The results of this study find that a 100 percent repayment rate of the CPSG arises out of two underlying factors: jointly liable group-lending contract and strong incentives. Employing jointly liable group-lending contracts will help the CPSG mitigate voluntary default or the strategic default problem and then lead to high repayment rate achievement. For strong incentives, the CPSG’s regulations have been designed to generate strong incentives inducing the borrowing member to repay the loan voluntarily, for example, a delinquent borrower will be deprived of the borrowing right for one year, and a default borrower who are dismissed from the membership will be excluded from the CPSG’ welfare services.

However, it is worth noting that in employing the group-lending scheme the CPSG shifts the burden of default risk to the members who are in a worse position to bear default risk than the lender (Stiglitz, 1990). Moreover, in this study the group-lending scheme employed by the CPSG has mitigated only the strategic default problem by neglecting adverse selection and moral hazard problems. By doing so, the CPSG may have to face involuntary default (adverse selection and moral hazard problems) in the future, and the borrowing member whose investment fails may be deteriorated by this lending scheme as well.

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1 Introduction

This chapter is the introductory part of the thesis, including problem background, problem, aim and delimitation, and outline.

1.1 Problem background

Based on the commercial discipline that focuses solely on profit maximizing, it is reasonable for conventional banks and/or formal financial institutions in excluding poor people from their target customers. There are at least three main reasons to do so. Firstly, poor people lack credit history which banks will use as primary data for the lending process (Van Tassel, 1999). Secondly, the poor cannot pledge any collateral, especially land, to compensate in case of default. Lastly, monitoring the loans provided to poor people is costly since most of them tend to be small amounts of money and the bank has little information about the poor. To offset these disadvantages of poor people and make the bank viable simultaneously, the banks will charge high interest rates from the poor. Therefore, if the poor would like to borrow money, they have to burden with high borrowing cost. This may make the poor worsen. On the other hand, based on human right discipline which believes in equality of all humans (www, United Nations Human Rights, 2011), access to credit is one of human rights regardless of social and financial positions (Yunus, 1999)[1]. Namely, the poor have authority in obtaining loans as long as they think they have potential to repay, and banks should support them. It seems that compatibility between commercial discipline and human right discipline is impossible.

In 1976, Dr. Muhammad Yunus, the founder of Grameen Bank, proved that commercial discipline and human right discipline can be compatible, i.e., Grameen Bank of which target clients are poor women can alleviate the poverty and gain the profit simultaneously. In addition, there are other successful microfinance institutions (MFIs) that operate their business like Grameen Bank: for example, Bank Rakyat Indonesia (BRI), the Associations for Social Advancement (ASA) in Bangladesh, the Bangladesh Rural Advancement Committee (BRAC), the National Microfinance Bank (NMB) in Tanzania, and ACCION International in Latin America (Armendariz de Aghion & Morduch, 2005; Hamada, 2010).

To measure the success of these MFIs compared to other MFIs and formal financial institutions, one of the indicators that can refer to alleviating the poverty and gaining the profit simultaneously is "**repayment rate**". Namely, achieving a high repayment rate of MFIs implies that the poor borrowers can earn enough income to repay their loans, and MFIs will gain the profit and surely have working capital for lending in the next period. For instance, according to Khandker (1996), Grameen Bank which had repayment rates above 95 percent has the significant impacts on the overall income growth and poverty alleviation and gain the profit margin about 9 percent of its assets (while other financial institutions obtain the profit margin of 3-4 percent).

In Thailand, **the Chanthaburi Province Savings Group (CPSG)** is a best practice MFI of high repayment rate achievement (www, Prachathai, 2011). As a result of a 100 percent repayment rate or no defaulted loans, the CPSG's working capital has been obviously

[1] This notion is consistent with Amartya Sen's book, *Development as Freedom*. In this book, he strives for changing the interpretation of development to include five significant freedoms as political freedoms, economic facilities, social opportunities, transparency guarantees, and protective security (Sen, 1999)

prospering from 6810 Baht in 1996 (Boonla, 2003) to 700 million Baht in 2010 (www, Prachathai, 2011). The working capital of 700 million Baht has been used for two main purposes: lending to the group member and being the capital for welfare provision.

1.2 Problem and aim

Previous research regarding microfinance institutions in Thailand have mainly focused on measuring the impact and the level of reaching the poor by targeting at "village funds" and NGOs-led MFIs (e.g. Coleman 1999, Coleman 2006 and Kaboski & Townsend 2006). Despite the importance of the repayment rate as mentioned above, there is a lack of research on it.

Furthermore, it is interesting that Grameen Bank, which is one of the best microfinance models in the world, have the repayment rate of 98 percent (Hamada, 2010), but which of the CPSG is 100 percent (www, Prachathai, 2011). This implies that the CPSG may have additional factors which Grameen Bank can adopt to increase its repayment rate to 100 percent.

In order to fill the gap, the aim of this research is to investigate what is the significant factors affecting the level of repayment rates by choosing the CPSG as the case study. The research question of this study is

- What are the key factors underlying the CPSG's high repayment rate?

1.3 Delimitations

Due to time limitation, the fundamental framework applied in this study is "the case study approach". The disadvantage of this approach is that frequently the findings and conclusions from a case study have come from unsystematic procedures, for example, ambigious evidence and biased views (Yin, 2009). The unsystematic procedures involve the aspect of research quality, especially reliability and validity (Golafshani, 2003). Furthermore, It is important to note that the results from a case study may become true only under the specific condition and environment surrounding the case. In other words, the results from the case study cannot generalize in every case: they are practical under some specific conditions.

In collecting data, interview and observation used in this study may come with an information bias, for example, the interviewees' bias and the researcher's interpretation.

1.4 Outline

This study is organized as follows:

- Chapter 1 (Introduction) presents an overview of the general background of microfinance, problem and aim, delimitation and outline.

- Chapter 2 (A theoretical perspective) describes the theoretical framwork in relation to this research.

- Chapter 3 (Method) presents the method used in this work, including research design, research strategy, and data collection.

- Chapter 4 (Background for the empirical study) outlines the background information of microfinance in Thailand and of the CPSG.

- Chapter 5 (The empirical results) presents the data collected from the fieldwork.

- Chapter 6 (Analysis and discussion) presents the empirical analysis and discussion by utilizing the content of the preceding chapters.

- Chapter 7 (Conclusions) summarizes the result and gives the suggestion for future research.

2 A theoretical perspective

This chapter presents the theoretical perspective that will help to understand this research clearly: the concept of microfinance, the key features of microfinance, and delinquency measurement.

2.1 Concept of microfinance

2.1.1 Definition of microfinance

"What is the exact definition of microfinance?" is the underlying question of understanding microfinance. According to Consultative Group to Assist the Poor (CGAP)'s homepage, microfinance's definition is:

"*Microfinance offers poor people access to basic financial services such as loans, savings, money transfer services and microinsurance*" (www, Consultative Group to Assist the Poor, 1, 2011).

In his essay, Robinson (1998) defines microfinance as follows:

"*Microfinance refers to small-scale financial services for both credits and deposits – that are provided to people who farm or fish or herd; operate small or microenterprises where goods are produced, recycled, repaired, or traded; provide services; work for wages or commissions; gain income from renting out small amounts of land, vehicles, draft animals, or machinery and tools; and to other individuals and local groups in developing countries, in both rural and urban areas*"

Additionally, Schreiner (2001) also describes the definition of microfinance as

"*Formal schemes designed to improve the wellbeing of the poor through better access to savings services and loans*"

As mentioned above, it is shown that there is no rigid definition of microfinance; nevertheless, we can summarize its general idea as "the openness of banking opportunities to poor people in reaching financial services, such as microcredit, microsavings, microinsurance, risk management and etc".

2.1.2 The objectives of microfinance

According to Hamada (2010), there have been three essential microfinance objectives: outreach, impact, and financial sustainability.

- *Outreach to the poor*. A microfinance institution should expand its financial services to cover all demands of the poor, especially the poorest of the poor.

- *Making a positive impact*. After obtaining financial services, clients' situations, both financially and socially, should be better off.

- *Maintaining financial sustainability*. Source of capital used in microfinance institutions and cost-efficient operations are two important factors affecting the financial sustainability of microfinance institutions.

2.2 Agency theory

Agency theory has been used to examine an agency relationship (Greenwood, 2003). Jensen and Meckling define an agency relationship as "**a contract** under which one or more persons (the principal(s)) engage another person (the agent) to perform some on their behalf which involves delegating some decision making authority to the agent" (Jensen & Meckling, 1976). Often, an agency relationship will pose the agency problem which results from the goal conflict between the principal and the agent (Eisenhardt, 1989; Huarng, 1995; Saam, 2007). In other words, the principal's utility negatively correlates with the agent's utility, or we can draw an equation as follows (Saam, 2007):

$$U_P(R) = 1/U_A(I)$$

Imposing that U_P = Utility of the principal
U_A = Utility of the agent
R = Returns
I = Income

From the equation, we will see that the principal's utility will depend on returns, whereas the agent's utility will depend on income. Both the principal and the agent want to maximize returns and income respectively. As a consequence, there is a trade-off between the utility of the principal and the utility of the agent (*ibid.*).

Consequently, the focus of the agency theory is to design the optimal contract for resolving the agency problem (Eisenhardt, 1985 & 1989; Bergen *et al*., 1992), or aligning the goals between principals and agents (Johnson & Droege, 2004). There are two types of contracts used to solve the agency problem: behaviour-based contracts and outcome-based contracts (Eisenhardt, 1985 & 1989; Bergen *et al.*, 1992; Greenwood, 2003; Johnson & Droege, 2004). Under a behaviour-based contract, the principal will directly monitor, assess, and reward the agent on the basis of information about the agent's actual behaviour (Bergen *et al.*, 1992). The principal will observe the agent's behaviour by investing in information systems, for example, budgeting systems, cost accounting measures, and additional layers of management (Eisenhardt, 1985 & 1989). Indeed, the principal cannot completely supervise the agent's behaviour because of informational asymmetry between the principal and agent (Bergen *et al.*, 1992). The implication of informational asymmetry between the principal and the agent is that the principal is unable to observe the characteristics (hidden characteristics), intentions (hidden intentions), information (hidden information), and actions (hidden actions) of the agent (Saam, 2007).

For the outcome-based contract or the incentive-based contract (Greenwood, 2003; Johnson & Droege, 2004), the agent will be rewarded on the basis of realized outcome (Bergen *et al.*, 1992). Logically, the agent will put the full effort to gain a high level of outcome since the remuneration paid to the agent will depend on the actual outcome. It is worth noting that under this contract the principal will not monitor and assess the agent (this is different from the behaviour-based contract), but he/she will pay attention only to performance outcome (e.g., sales). The principal needs to design the outcome-measuring systems. On the one hand

this contract can induce the agent to pursue the goals that are directly associated with the principal's goals (Johnson & Droege, 2004; Bergen *et al.*, 1992), but on the other hand, this contract shifts risk from the principal to the agent (Eisenhardt, 1985 & 1989; Bergen *et al.*, 1992). The issue of risk arises because the outcome is partly a function of uncontrollable variables, for instance, government policies, economic climate, competitor actions, technological change, and so on – called as the outcome uncertainty (Eisenhardt, 1989). These variables are out of the agent's capability. If the outcome uncertainty is low, the costs of shifting risk borne by the principal will be low (*ibid*.). In essence, the outcome-based contract will not only motivate the agent's behaviour, but also change risk sharing patterns between principals and agents (Eisenhardt, 1985). However, we should realize that in the agency theory the principal who is assumed to be risk neutral is in a better position to bear risk than the agent who is assumed to be risk averse (Eisenhardt 1985 & 1989; Bergen *et al.*, 1992; Saam, 2007). This is because the principal can diversify his/her investment, but the agent cannot (Eisenhardt 1985 & 1989; Bergen *et al.*, 1992).

Interestingly, both the behaviour-based contract and the outcome-based contract have been mainly designed to maximize the principal's utility, rather than maximizing the joint utility of both the principal and the agent (Bergen *et al.*, 1992). Employing either the behaviour-based contract or the outcome-based contract will depend on comparing the cost of measuring behaviour and the cost of measuring outcomes and transferring risk to the agent (Eisenhardt, 1985 & 1989).

2.3 Microfinance stakeholders and evolution

2.3.1 Microfinance stakeholders

There are three essential stakeholders engaging in microfinance as shown in figure 1.

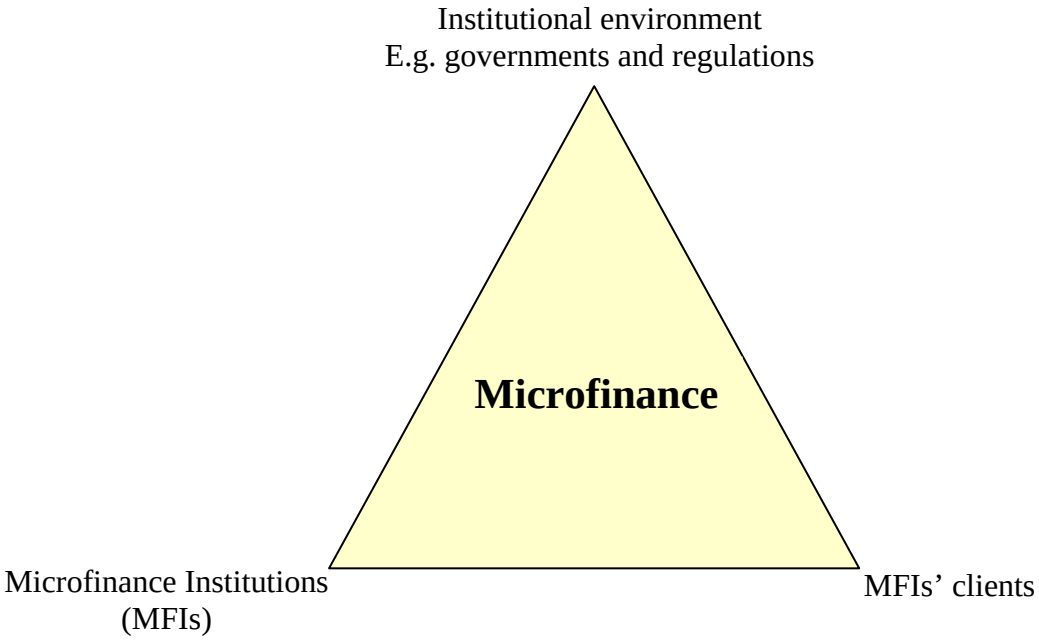


Figure 1: Microfinance stakeholders

Microfinance Institutions (MFIs). MFIs are a financial organization that provides financial services to underprivileged clients, which mostly are the poor (www, Consultative Group to Assist the Poor, 2, 2011). We can divide the types of MFIs into two broad groups: formal and informal. Formal MFIs are those MFIs which operate under two regulations stipulated by the government and by the group members, for example, commercial banks which target at the poor, the government's specific-purposed banks, credit unions and credit cooperatives. For informal MFIs, their operation is under only group member-stipulated regulations, for instance, self-help groups and rotating savings and credit associations (ROSCAs) (*ibid.*).

MFIs' clients. A number of people have usually adhered to a thought that MFIs' clients are only those who incur poverty and are excluded from conventional banking. Indeed, MFIs' clients have also included vulnerable non-poor people who become more vulnerable to external shocks and easily fall into poverty (www, Consultative Group to Assist the Poor, 3, 2011; Fernando, 2007). In other words, those who fall in or have a possibility to incur poverty are all MFIs' clients. Particularly, in Islamic countries in which social class has been characterized by gender, the majority of MFIs' clients have been women who have had lower social class than men.

Institutional environment. Governments and regulations are two vital environments surrounding microfinance, particularly after transforming to microfinance industry of MFIs (Arun, 2005). Namely, governments on behalf of the policy maker and the regulator will frame microfinance direction and enact regulations by which MFIs have to comply with. For this reason, we can say that MFIs' development depends in part on appropriate regulatory frameworks enacted by the visionary government.

2.3.2 The evolution of microfinance

From the past to the present, the microfinance evolution can be divided into three periods of time: the 1980s, beginning of the 1990s, and the end of 1990s (Glaubitt *et al,* 2006)

The 1980s
During the 1950s to 1980s, the microfinance service was restricted to the microcredit program subsidized by governments and/or donors with a focus on the agricultural sector (Glaubitt *et al*, 2006; Hamada, 2010). The success of the microcredit program in this period was outreach to the target clients, poor households and microenterprises, by not requiring collateral. However, this program accompanied with shortcomings as follows (Glaubitt *et al*, 2006):

- The microfinance service was limited to microcredit.
- The number of target clients was small, covering only clients in the agricultural sector.
- Lacking a systematic approach posed the high transaction cost problem.

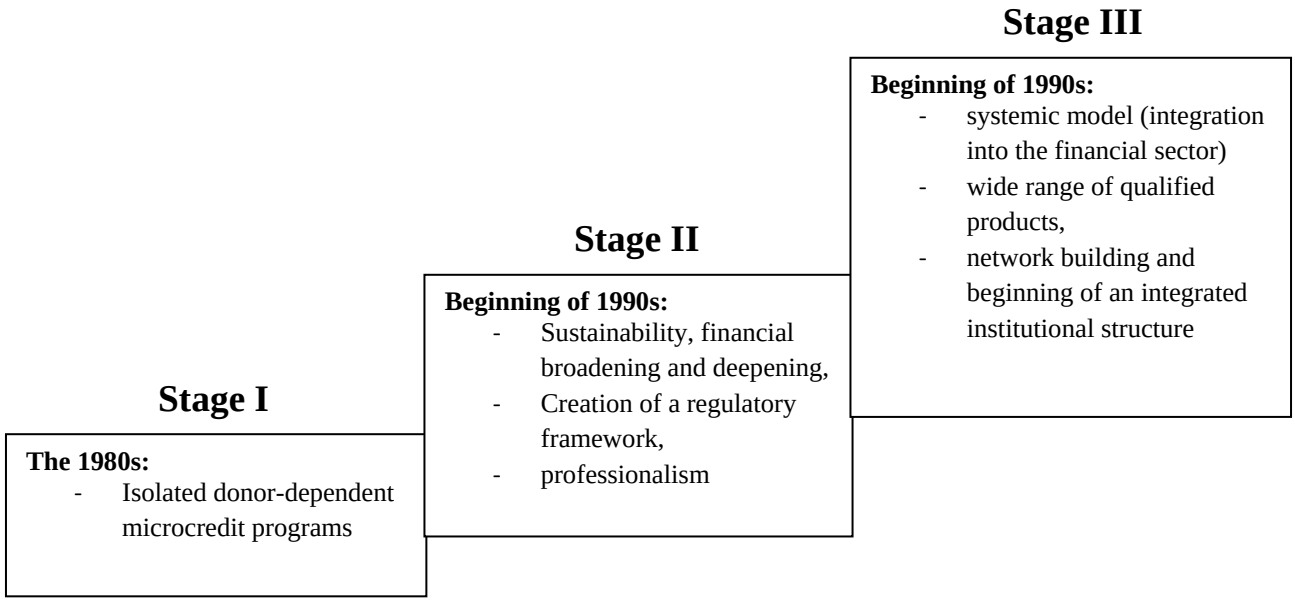
Beginning of the 1990s
From the shortcomings in the last period, gradual integration into mainstream financial sector, which builds cost-efficient operations and expands the customer base, was applied by many microfinance programs. In other words, microfinance programs were transforming themselves into microfinance models by imposing financial sustainability as one of their objectives and extending their clients as generally poor people, not just the poor in the agricultural sector (Glaubitt *et al*, 2006; Hamada, 2010). The prominent example is Grameen Bank. We should,

however, bear in mind that governments and donors were still two important sources of capitals for microfinance models in this period.

The end of the 1990s

Microfinance models in the last period have been transforming into microfinance institutions (MFIs) since operating in the form of microfinance models subsidized by governments/donors was incompatible with the mainstream financial sector. This occurrence has resulted in a large scale of clients and qualified financial products; moreover, there has been the creation of networks that link MFIs together like commercial banks (Glaubitt *et al*, 2006*)*. We can say that in this period (and presently) the border between MFIs and commercial banks are blurred.

In conclusion, microfinance's evolution is shown in figure 2.



Source: Glaubitt *et al.* in Matthaus & Pischke (2006: 215)

Figure 2: The evolution of microfinance

2.4 Key features of microfinance

2.4.1 Collateral-free contracts

According to Balkenhol &Schutte (2001), collateral is an asset pledged by a borrower to a lender for covering the risk of a loan. If the borrower can repay the loan in full, he/she will get the collateral back. On the contrary, if he/she defaults on payment, the lender has right to seize and sell the collateral to offset the loan. Furthermore, in their study, Ghatak & Guinnane (1999) indicate that pledging collateral is the method used by conventional banks for separating safe borrowers from risky ones. If the bank offers two different contracts: high interest rates with low pledged collateral and low interest rates with high pledged collateral, risky borrowers ,who are likely to fail more often (and lose their collateral) and gain high returns simultaneously, will select the former and safe borrowers the latter (*ibid.)*.

Despite the importance of collateral, a MFI cannot oblige their poor customers to pledge physical collateral since they have little or no collateral. Therefore, loans provided by MFIs

will be in the form of physical-collateral-free loans[2]. Although lack of physical collateral excludes the poor from conventional financial institutions, group-lending with joint liability which plays role as social collateral will help the poor to reach financial services (Armendariz de Aghion & Morduch, 2005).

2.4.2 Group lending with joint liability

With regard to the microfinance aspect, informational asymmetry between the lender and the borrower is the underlying reason for the agency problem (Armendariz de Aghion & Morduch, 2005). Then, the agency problem is the main obstacle to achieving a high repayment rate as shown in figure 3.

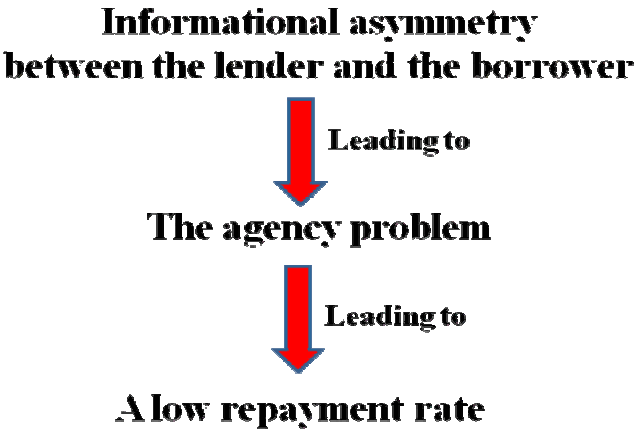


Figure 3: The obstacle to attaining a high repayment rate

Armendariz de Aghion & Morduch classify the agency problem caused by information asymmetry into three distinct stages with three major problems (*ibid.*). First, before granting loans, a lender has little or no reliable information to distinguish risky borrowers from safe ones, or frequently the risky borrowers may pretend that they are the safe borrowers and the lender do not know about it. This problem is called as **adverse selection or the screening problem.** Second, after granting loans, a lender cannot completely ensure that the borrower will utilize the loan appropriately, and then be able to repay the loan. Sometimes the borrower may use the loan for non income- generating activities. This problem is called as **moral hazard or the monitoring problem**. Lastly, after investment returns have been realized, a lender is unable to force the borrower to repay the loan if he/she is reluctant to do. This problem is named as **strategic default or the enforcement problem** (Wenner, 1995; Van Tassel, 1999; Armendariz de Aghion & Morduch, 2005; Kono & Takahashi, 2010). Theoretically, if MFIs can solve these problems, they will achive a high repayment rate as shown in figure 4 (Wenner, 1995; Besley & Coate, 1995; Ghatak, 1999; Ghatak & Guinnane, 1999; Kono & Takahashi, 2010).

[2] Currently, savings discipline of borrowers can be used as collateral, for example *Safe*Save in the Dhaka Slums and Grameen Bank (Armendariz de Aghion & Morduch, 2005, 136).

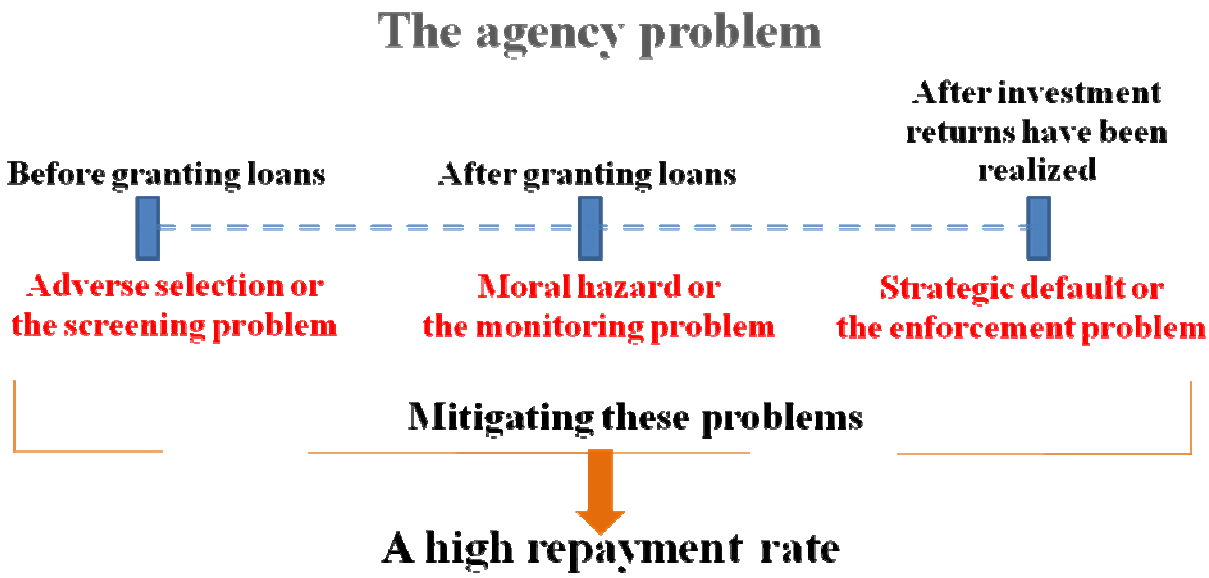


Figure 4: How to achieve a high repayment rate

Normally, the lending scheme used by the conventional bank is the individual lending contract. With the individual lending scheme, an individual borrower is required to pledge collateral as a condition of borrowing process, and the bank will take a responsibility for screening, monitoring, and enforcement. In comparison with the agency theory, the individual lending contract is similar to the behaviour-based contract that the the principal (the lender) will directly supervise the agent (the borrower). But this lending scheme is incompatible with the microfinance's context for two reasons. First, most clients of MFIs are the poor who lack collateral to pledge. Second, there is informational asymmetry between the lender and the borrower; therefore, the individual lending contract cannot effectively solve three problems mentioned above.

Alternatively, the lending contract used by most MFIs is the group-lending contract with joint liability. This contract asks the borrowers to form the borrowing group by themselves- known as self-selected group, by not pledging collateral. Despite non-collateral requirements, joint liability between the group members is likely to be social collateral pledged to the lender i.e., all group members have to take a responsibility for all loans of the group members in case of default (Ghatak, 1999; Ghatak & Guinnane, 1999). The lender will transfer three main responsibilities: screening, monitoring, and enforcement, to all group members, or the lender will focus solely on the repayment. The basic notion underlying this lending scheme is that the borrowers with connections of shared area or other bonds based on kinship and occupation have each other's information, especially about investment returns, better than the lender (Ghatak & Guinnane, 1999; Van Tassel, 1999). There is no informational asymmetry between the borrowers. Thereby, dealing with three problems mentioned above by the borrowers (the group-lending contract) is more effective than by the lenders (the individual contract). Moreover, non-collateral requirements are beneficial to the poor who has liitle or no collateral to pledge.

In comparison with the agency theory, the group-lending contract is similar to the outcome-based contract or the incentive-based contract. The lender or the principal will pay attention only to the repayment (outcome) by shifting risk, particularly default risk, to the group

borrowers or the agent (Stiglitz, 1990; Armendariz de Aghion & Morduch, 2005). Interesting, in the microfinance's context joint liability will play role as as incentive for borrowers to solve three agency problems since the members prefer to repaying their own loans to repaying others' loans.

In conclusion, employing group-lending with joint liability can mitigate three problems: adverse selection, moral hazard, and strategic default, and then lead to a high repayment rate.

Mitigating adverse selection

In case of no informational asymmetry between lenders and borrowers, a lender is able to distinguish safe borrowers from risky ones, and then charge them at different interest rates depending on the borrowing cost. Unfortunately, this is an extreme case because in the real world lenders do not have perfect information about their borrowers. The lender cannot distinguish safe borrowers from risky ones; hence, the lender have to offer loans to all borrowers at the same average rate (Ghatak, 1999), which mostly will be at the high level to compensate for the possibility of having risky borrowers (Armendariz de Aghion & Morduch, 2005). In other words, safe borrowers implicitly subsidize risky borrowers (*ibid*.). This leads to the lemons model of Akerlof (1970) i.e., at the average interest rate the safe borrowers prefer leaving the market to shouldering the subsidy on the risky borrowers; eventually at the equilibrium of not using group lending with joint liability there will be only the risky borrowers with high interest rates in the market.

Group lending is the key to the solution of this problem. Since the borrowers know each other better than the lender and all borrowers prefer to have safe borrowers in their group because of shouldering lower expected jointly liable payment (Ghatak & Guinnane, 1999), the safe borrower is prone to find other safe partners to form a borrowing group and the risky borrower is implicitly compelled to form a group with other risky partners. For the bank, it can use the level of joint liability and interest rates to distinguish safe groups from risky groups. Namely, if a bank offers two distinct lending contracts: high interest rates with low joint liability and low interest rate with high joint liability, a risky borrower will select the former since he/she does not want to bear the risk of other risky borrowers who are likely to fail, a safe borrower will select the opposite (*ibid.*). By doing so, at the equilibrium of adopting group lending with joint liability there will be both groups: safe borrowers and risky borrowers, with lower interest rates than the equilibrium of not using group lending with joint liability.

For this reason, the bank, the safe borrower, and the risky borrower will benefit from group lending with joint liability simultaneously. The bank will be able to separate safe borrowers from risky ones, and then charge them with different interest rates depending on the borrowing cost of each group. The safe borrowers who are excluded from the equilibrium of not using group lending with joint liability will be attracted back into the market because they do not bear the default risk of risky borrowers. For the risky borrowers, coming back of the safe borrowers will reduce the interest rates at the equilibrium, so that they will have the lower interest burden. We can say that group lending with joint liability can improve social welfare of all players in financial markets (Ghatak, 1999; Armendariz de Aghion & Morduch, 2005).

Mitigating moral hazard

After the loan has been granted, a lender will economically expect a borrower to produce at the profit-maximizing point (marginal benefit = marginal cost). At this point the lender will

ascertain that the borrower has the ability to repay the loan (Ghatak & Guinnane, 1999). Indeed, the lender is unable to ensure that borrowers will put the full efforts or take the full actions required to achieve their projects: there is informational asymmetry between the lender and the borrower.

According to Stiglitz (1990), based on perfect information between borrowers, jointly liable group-lending contracts can mitigate the moral hazard problem by inducing group members to monitor each other's investment projects – known as "**peer monitoring**". In some cases, if a group member chooses to invest in the excessively risky project, the other group members will inflict a penalty upon him/her (Armendariz de Aghion & Morduch, 2005). Stiglitz argues that jointly liable responsibilities are the underlying incentive of peer monitoring. Namely, undertaking a risky project, which is most likely to fail, of a group member means that the others in that group have to shoulder high risk inevitably. To prevent this situation group members have to monitor (and sometimes have to punish) their peers to only invest in projects with acceptable risk[3].

Mitigating strategic default

After investment returns have been realized, the following problem faced by the lender is "strategic default" or "enforcement problem". This problem arises from the lender's inability to enforce the borrower to repay the loan (Besley & Coate, 1995). In other words, the lender's sanctions are restricted from legal frameworks (Ghatak & Guinnane, 1999). Additionally, if the borrower claims that his/her investment is unprofitable, the lender cannot verify the borrower's actual return.

According to Besley & Coate (1995), employing jointly liable group-lending contracts has two opposing effects on the lender: positive and negative. Positively, in case of a delinquent/default borrower, the lender will ascertain that his/her partners will repay his/her loan instead. Negatively, if the entire group defaults or the partners refuse to repay peers' loans, the lender is most likely to get loss. However, they also indicate that if the borrowing group is constituted from the community with a high degree of social ties, social punishments imposed by group members can mitigate the negative problem. Defaulting intendedly, a delinquent borrower and/or his/her peers in the borrowing group have to incur social penalties. For example, the wrath of group members or the expulsion from the community. Indeed, such peer pressure derives from the fact that in general a borrower does not want to repay others' loans, he/she wants to pay only his/her loan. Therefore, with sufficient social ties and social penalties, jointly liable group-lending contracts can yield high repayment rates.

In conclusion, we can categorize loan default caused by the agency problem into two types: voluntary and involuntary (Brehanu & Fufa, 2008). Involuntary default arises from undesirable situations, for example, being highly indebted, less profitable, and less liquid (Fidrmuc & Hainz, 2010), which in turn influence the borrower's ability to repay the loan (Brehanu & Fufa, 2008), or assuming that the borrower will repay the loan if he/she is able to do (Besley & Coate, 1995). With the informational advantages of group lending with joint liability, group members will screen and monitor each other' projects in order to prevent involuntary default (mitigating adverse selection and moral hazard). On the contrary, the voluntary default refers to a circumstance that a borrower is able to repay the loan but he/she is unwilling to do. Additionally, if the debtor claims that his/her project got failed, the creditor cannot verify it. Apart from informational advantages, joint liability group lending also

[3] An acceptable risk of the project in a group with safe borrowers will be lower than in a group with risky borrowers.

creates “peer pressure” which can enforce the group members to repay the loan (mitigating strategic default).

2.5 Delinquency measurement

In lending to the poor, MFIs need to pay attention to the quality of loan portfolio which is associated with the default risk (www, CGAP, 4, 2011; Mondragón-Vélez & Glen, 2011). The lower the quality of loan portfolio MFIs start with, the higher their default risk occurs (Mondragón-Vélez & Glen, 2011). Measuring loan portfolio quality through performance ratios will help MFIs cope with the default problem. However, it is important to note that the denominator of performace ratios used to measure loan portfolio quality is only “gross loans” (www, CGAP, 4, 2011) because the meaning of gross loans refers to the loan portfolio.

Default is rooted in the delinquency which occurs when one loan repayment is one day late (*ibid.*). The longer the delinquency is overdue, the higher the default risk occurs. Consequently, we can measure the default risk through delinquency ratios. According to Rosenburg (1999), there are three delinquency ratios: collection rates, arrears rate, and portfolio at risk rates (PAR).

Collection rates
The formula of this ratio is

$$\frac{\text{Amount collected this period}}{\text{Amount due this period}}$$

This ratio measures money collected in one period against total money due in the same period. The numerator of this ratios is actual cash received in one period, and the denominator is the total amount due to be paid in the same period. Sometimes, this ratio may be called “recovery rate”, “repayment rate”, or “loan recuperation” (*ibid.)*. The advantage of this ratio is that the information is simple and easy to collect (*ibid.*). However, we should realize that the collection rate cannot measure loan portfolio quality becasuse its denominator is not gross loans, not referring to the loan portfolio.

A collection rate is used to describe a 100 percent repayment rate of the CPSG (discussed more in chapter 5).

Arrears rates
The formula of this ratio is

$$\frac{\text{Late payments}}{\text{Gross loans}}$$

This ratio measures the amount of loans past due as a percentage of gross loans – or know as outstanding portfolio (*ibid.*). The numerator is total loan amounts past due, while the denominator is the total loans. It is worth noting that this ratio may pose the illusion problem to MFIs since the amount past due is usually small relative to gross loans. Therefore, an arrears rate will be a small number. With a small arrear rate, MFIs may be tempted to feel complacent about their performance while loan portfolio quality is deteriorating gradually (*ibid.*).

Portfolio at Risk (PAR)
The formula of this rate is

$$\frac{\text{Outstanding balance of loans past due}}{\text{Gross loans}}$$

This ratio is commonly used not only by MFIs but also by the conventional bank for measuring loan portfolio quality.This denominator of PAR rate is the same as an arrears rate, but its numerator will be the outstanding loan with late payment which refers to the default risk (*ibid.*). In general, a PAR will be relevant to any degree of lateness (*ibid.*).

In microfinance, PAR_{30} will be use as a common breakpoint (www, CGAP, 5, 2011; www, United Nations Capital Development Fund, 2011). PAR_{30} focuses on the outstanding balance of all loans with a payment more than 30 day late. For the CPSG, a loan with one day late will be categorized as the delinquent loan; hence, the PAR of the CPSG is PAR_0.

Table 1 shows the underlying concept of three delinquency ratios described above.

Table 1: The underlying concept of collection rates, arrears rates, and PAR rates

Delinquency ratio	**Formula**	**Measurement**
Collection rate	$\frac{\text{Amount collected this period}}{\text{Amount due this period}}$	Shows amount paid against amount due or expected during a specific period. This ratio dose not provide information regarding loan portfolio quality.
Arrears rate	$\frac{\text{Late payment}}{\text{Gross loans}}$	Measures amount of loan principal principal that is overdue. Despite being ableto measure loan portfolio quality, this ratio is likely to create the overoptimistic complacency of portfolio quality.
PAR rate	$\frac{\text{Outstanding balance of loans past due}}{\text{Gross loans}}$	This ratio is generally used to measure the quality of loan portfolio. Portfolio aging will separate more risky loans from less risky ones. The longer an outstanding loan is overdue, the higher the risk it will be the defaulted loan.

Source: Adapted from CGAP (www, CGAP, 4, 2011)

To exemplify three delinquency indicators mentioned above, we suppose that there are three borrowers: A, B, and C. Each borrowed $500 from the bank with $100 monthly amortization, by assuming that there is no interest payment. Particularly PAR rate, we will focus on PAR_0 and PAR_{30}.

	Principal		Monthly amortization
A	500		100
B	500		100
C	500		100
Gross loans	**1500**	Amount due each month	**300**

Case I: *In the 1st amortization, there is no delinquency.*

Collection rate = Amount collected this period / Amount due this period
= 300 / 300
= 1 or 100%

Arrears rate = Late payment / Gross loans
= 0 / 1500
= 0

PAR_0 = Outstanding balance of loans past due / Gross loans
= 0 / 1500
= 0

PAR_{30} = Outstanding balance of loans past due / Gross loans
= 0 / 1500
= 0

Case II: *In the 1st amortization, Mr. A's payment is overdue.*

Collection rate = Amount collected this period / Amount due this period
= 200 (Principal amortization of Mr. B and C) / 300
= 0.67 or 67%

Arrears rate = Late payment / Gross loans
= 100 (Mr. A's late payment) / 1500
= 0.067 or 6.7%

PAR_0 = Outstanding balance of loans past due / Gross loans
= 500 (Mr. A's outstanding loan) / 1500
= 0.33 or 33%

PAR_{30} = Outstanding balance of loans past due / Gross loans
= 0 / 1500
= 0

Case III: *In the 2nd amortization, Mr. A's payment is still overdue, and Mr. B'payment is also overdue.*

Collection rate = Amount collected this period / Amount due this period
= 100 (Principal amortization of Mr. C) / 300
= 0.33 or 33%

Arrears rate = Late payment / Gross loans
= 200 (Late payment of Mr. A and Mr. B) / 1500
= 0.13 or 13%

PAR_0 = Outstanding balance of loans past due / Gross loans
= 900 (Outstanding loans of MR.A and MR. B[4]) / 1500
= 0.67 or 67%

PAR_{30} = Outstanding balance of loans past due / Gross loans
= 500 (Mr. A's outstanding loan) / 1500
= 0.33 or 33%

On the one hand increasing degree of lateness from zero to thirty days (from PAR_0 to PAR_{30}) will decrease the level of deault risk from 67 percent to 33 percent, but on the other hand, the default risk with the higher degree of lateness is less likely to recover the unpaid balance than that with the lower degree of lateness (Rosenburg, 1999). Additionally, imposing degree of lateness should be consistent with the revenue cycle of the borrower. For example, if a borrower is the farmer, he will acquire the revenue after harvesting his crops. Frequent amortization may be inconsistent with his revenue cycle (*ibid.*). Imposing degree of lateness at the low level may distort the actual payment capability of the borrower. For this reson, MFIs need to group their degree of lateness corresponding to the revenue cycle of the poor borrowers. This require MFIs to make the systematic account for the purpose of grouping the appropriate degree of lateness (*ibid.*).

Despite the importance of PAR rates described above, the most appropriate ratio for this study is the collection rate. Since most of the CPSG's committees are the villagers whose accounting knowledge is in a low level, the group's account will be the simple account generating simple information. This is consistent with the advantage of the collection rate which uses elementary information for calculating the result (*ibid.*).

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[4] In the second amortization, the outstanding loan of MR. B accounts for 400 because he paid 100 in the first amortization already.

3 Method

This chapter presents the method applied in this thesis, including research design, research strategy, and data collection.

3.1 Research design

According to Creswell (2009), there are three types of research designs: qualitative, quantitative, and mixed method. There is no one best method for doing research; hence, the researcher needs to choose the most appropriate method for his/her research. In this thesis, the most appropriate method is "qualitative research method" which is a way for exploring and understanding the meaning of the situation derived from a social or human problem (*ibid.*). This definition is consistent with the aim of this thesis which intends to understand the reason underlying a 100 percnet repayment rate of the CPSG.

In conducting qualitative research, there are two concerns in relation to research quality: reliability and validity (Golafshani, 2003).

- ***Reliability***: Data used in qualitative research should be examined, referring to trustworthiness.

- ***Validity:*** The research instrument should accurately measure what is intended to measure.

With regard to reliability, data used in this study is the primary data collected through the interview, observation, and the CPSG's documents. Since this study tries to understand the phenomenon of achieving a high repayment rate of the CPSG, using primary data will enables the researcher to get closer to what actually happened than secondary data, leadin to trustworthniness. In case of validity, the research instruments, interview, observation, and the CPSG's documents, will be specifically used for the purpose of extracting the key factors underlying high repayment rate achievement which is the research question of this study.

3.2 Research strategy

Though there are many ways to conduct qualitative research, for example, experiment, survey, archival analysis, history, case studies and etc., considering which methods are the best one for the research depends upon three conditions: types of research question, whether there is the control over actual behavioral events?, and whether there is focus on contemporary events?, as illustrated in table 2 (Yin, 2009).

Table 2: Relevant situations for different research methods

Method	Form of research question	Requires Control of Behavioral Events?	Focuses on Contemporary Events?
Experiment	How, Why?	Yes	Yes
Survey	Who, What, Where, How many, How much?	No	Yes
Archival Analysis	Who, What, Where, How many, How much?	No	Yes/No
History	How, Why?	No	No
Case study	How, Why?	No	yes

Source: COSMOS Corporation cited in Yin (2009: 8)

Based on three conditions referred above, "the case study" is the most proper research method for this thesis since the conditions of this method is consistent with the aim of this study. This thesis aims at understanding the contemporary phenomenon of a 100 percent repayment rate of the CPSG, by not imposing any control on behavioral events. In line with Yin (2009), he states that the case study is the method that helps the researcher to understand a real-life phenomenon in depth by encompassing important contextual conditions.

It is worth noting that a qualitative case study does not aim to produce generalizable results but rather to make a better understanding of a specific circumstance (Marshall, 1996; Wilmot, 2005). A case study of the CPSG may not be generalizable; however, it provides better knowledge of high repayment rate achievement of a community member-constituted MFI in Thailand. This knowledge can be applied to other community member-established MFIs operating in Thai context.

3.3 Data collection

The data used in this study is collected between March 7th to 20th, 2010 through the CPSG's documents, an interview, and observation.

The CPSG' documents
The CPSG's documents associated with the content of this research comprise of the lending contract and the group regulations in case of delinquency and default.

Interviews
The researcher divides the interviewees into two groups: key informants and respondents. The key informants are those who can provide deep information regarding the CPSG and have enough time for the interview, for instance, the founder of the group and the committee. An interview with key informants will be in the form of *in-depth interviews*. For the respondents who are the group members, they do not have much time for the interview since after attending group activities they have to go back to their works which mostly are in the field of agriculture. Therefore, a *focused interview* is the most proper way for the respondents.

Observation
By attending the monthly group meeting, the direct observation is for the purpose of seeking additional information regarding the group process and/or the social process. The researcher believes that these processes will influence the level of repayment rates of the group.

4 Background for the empirical study

The following chapter presents an empirical introduction to microfinance in Thailand, an overview of the Chanthaburi Province, and the background of the CPSG.

4.1 Microfinance in Thailand

Although there is no clear evidence regarding the origin of microfinance in Thailand, there is no doubt that individual lenders, for example, traders and landlords, have existed in the society for a long time, so have Thailand. Due to high interest rates charged by the individual lender, the Thai government has put an effort to provide cheap credit to the poor through formal and semi-formal microfinance institutions. However, outreach of those government-launched MFIs has been limited (and sometimes the lending process of these MFIs is too complicated for illiterate borrowers); therefore, the community members need to form the informal credit group for helping each other by themselves.

Ministry of Finance has divided the microfinance system in Thailand into three main categories: formal and large MFIs, semi-formal MFIs, and informal MFIs (www, Banking with the Poor Network, 2011).

Formal and large MFIs
Formal and large MFIs are those conventional banks which service the rural entrepreneur as the key client and operate under prudential regulations (*ibid.*). For example, Bank of Agriculture and Agricultural Cooperatives (BAAC), Government Savings Bank (GSB), and SME Development Bank. On the one hand formal and large MFIs can widely serve the rural entrepreneur financial services, but on the other hand, adhering to the strict process of the conventional bank, for example, collateral requirement and a complicated lending process, has been an important obstacle to accessing the credit for the poor.

Semi-formal MFIs
To improve an opportunity of accessing the credit for the poor, the government has launched semi-formal MFIs which operate under the lower level of conventionally banking processes than formal and large MFIs. In other words, semi-formal MFIs have operated under non-prudential regulations (*ibid.*). In addition to providing the loan, promoting savings and investment in the community are the additional mission for semi-formal MFIs (*ibid.*). For example, credit union cooperatives, registered savings-for-production groups, Village and Urban Revolving Fund, et al.

Informal MFIs
Apart from two government-sponsored MFIs referred to above, in Thailand there have also been NGOs-supported and community member-based MFIs throughout the country. Most of them have adopted either the village bank or the solidarity group as the operating model (*ibid.*). Community members' savings are the main capital for lending to those members who want to borrow. Although at the outset gathering the savings from community members was so difficult to do because of lack of a government guarantee, presently informal independent MFIs, especially self-help savings groups, have been proven to be the most successful microfinance model in Thailand (*ibid.*)

At the present time under the Financial Sector Master Plan (FSMP) Phase II during 2010 – 2014, the government aims at promoting financial accessibility to various groups of population, especially for unbanked and undeserved segments (www, Microfinance Thailand, 2011; www, Microfinance Focus, 2011). Some regulations have been relaxed for allowing new domestic and foreign microfinance providers to set up operations (Economist Intelligent Unit, 2010). Before starting the business, a new microfinance provider needs to be approved from the Bank of Thailand and Ministry of Finance (*ibid.*). In other words, the government attempts to systematize the new microfinance provider. On the one hand licensing new microfinance players will extend low-income individuals' opportunity for reaching financial services, but on the other hand, it will increase the degree of competition between formal/semi-formal MFIs and informal MFIs. There is a high possibility, in a foreseeable future, that informal MFIs will be forced out of the market due to their deficient competitiveness.

In line with the evolution of microfinance mentioned in chapter 2, MFIs in Thailand have been gradually transforming government-sponsored MFIs (Stage II) into commercial MFIs (Stage III).

4.2 Overview of the Chanthaburi Province

Figure 5: Map of Chanthaburi province

Chanthaburi is one of the eastern provinces of Thailand as shown in figure 5. The neighboring provinces are Chonburi, Chachoengsao, Sa Kaeo, Trat, and Rayong. Chathaburi has the area of 6,338 square kilometers with a population (in April, 2011) of 515,842 (www, Chanthaburi Governor's Office, 2011). The province is divided into 10 districts. These districts are further subdivided into 76 sub-districts and 728 villages[5] (*ibid.*).

Unlike other regions, the eastern one has been arranged as the main industrial area of Thailand. There are 21 industrial estates located in this region (www, Industrial Estate Authority of Thailand, 2011). Becoming an industrial area has accompanied with the high level of infrastructure, for example, electricity, water, and transport. For this reason, every province in this region will have better infrastructure than the others, except Bangkok and vicinities which have been the main commercial area of Thailand for a long time.

The economy of Chanthaburi has mainly depended on two major sectors: agriculture and business. Most of the people in Chanthaburi are the crofter (www, Chanthaburi Governor's Office, 2011). According to National Statistical Office (NSO), in 2008 per capita income of population of Chanthaburi accounts for 78435 Baht, markedly increasing from 43743 Baht in 1999 (www, NSO, 2011). Income per capita of the whole country in 2008 is equal to 136954

[5] In Thailand, the village is the smallest official political unit, and is under the sub-district, district, and province levels, respectively.

Baht (*ibid.*). Interestingly, having lower income per capita than the whole country does not mean Chanthaburi people live in poverty since, in 2008, income per capita of Chanthaburi province is four times higher than the poverty line with 18948 Baht (www, Office of the National Economic and Social Development Board, 2011).

In conclusion, there are two social characteristics overlapping within Chanthaburi province: urban and rural. On the one hand resulting from encouraging the eastern region to be the main industrial area, Chanthaburi province has been gradually propelled into urban society, especially in terms of infrastructure, but on the other hand, still mainly relying on agricultural sectors, the society has maintained the tight relationship between community members. This represents the outstanding characteristic[6] of the rural society in Thailand.

4.3 Background of the Chanthaburi Province Savings Group

4.3.1 Brief history of the Chanthaburi Province Savings Group

Two decade ago, economic and social problems were two underlying problems of Thailand, and the government agencies had low potential to deal with these problems promptly and efficiently. In 1990, one Buddhist monk[7] in Trat province, who is the founder of the Trat Province Savings Group, believed that villagers have the potential, which is called "*social capital*[8]*"*, to deal with these problems by themselves, not totally relying on the government (Khacha, 2006). He also thought that the profit-maximizing objective, which is the ultimate goal of capitalism, is not harmful per se (it is a reasonable objective for doing the business), but the profit should be partly allocated back to the customer or the community (*ibid.*). This is consistent with the double bottom line concept which gives emphasis on two main aspects of doing business: economic and social (Tulchin, 2003). Additionally, in contrast to the government officer who acquires the welfare before and after retirement, the rural villagers who mostly are the small farmer have no security. Lack of welfare affects the villager to be vulnerable to negatively unexpected shocks.

To solve the problems mentioned above, the solution is to group the community members together in the form of a savings group. The group will operate like the financial institution that the member can deposit money[9] and borrow money with low interest rates. The group's profit will be transferred to "a welfare fund". The major responsibility of this fund is to provide welfare services coving health, occupation, education, elderly, and death, to the group members. Reaching low-cost loans and obtaining the welfare can help the members improve their quality of life.

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[6] Most Thai rural communities are associated with agriculture-based production, as it has been for centuries. Therefore, when mentions rural communities, it also refers to agriculture-based ones.

[7] Apart from being spiritual leaders, the Buddhist monk in Thailand has also played role as the informal community leader who gets reliability from community members. In case of forming the saving group, indeed, the monk has no formal authority to do, but he can point out to the villager the benefit obtained after forming the savings group. Then, the villagers will form the saving group by themselves, and the monk will be the consultant of the group.

[8] The underlying social capital behind the savings group model is "oath" i.e., before becoming the group members, everyone has to take the oath that he/she will deposit money and/or amortize the loan every month. This is the most important rule.

[9] With the economic reason, the borrowing interest will be higher than the savings one. From the interview, interestingly, if there are two choices of interest rates: low borrowing interest with low saving one and the opposite, a number of group members prefer the former rather than the latter. Furthermore, in the long run, the member will focus only on low borrowing interest and the level of welfare he/she will obtain, by not requiring any saving interest. This aspect will be discussed more in the following chapter.

On 7th May 1990, the villagers in Koh-kwang village, Huay-rang sub-district, Mueang district, Trat province, grouped together and named "the Trat Province Savings Group". This was the beginning of the monk-initiated savings group in Thailand[10] (Khacha, 2006).

Six years later, PhraManus Khanthithammo the founder of the CPSG had an opportunity to visit the Trat saving group. He foresaw that this model will be beneficial to Chanthaburi people, but its regulations should be adjusted to be consistent with the social context of Chanthaburi. On 10th March 1996, the first CPSG was founded at Phluyang village, Seephaya sub-district, Thamai district with the members of 108 and the initial savings of 6810 Baht (Boonla, 2003).

4.3.2 The objectives of the Chanthaburi Province Savings Group

The CPSG has four objectives as follows (Community Organizations and Partners Support Office, 2010):

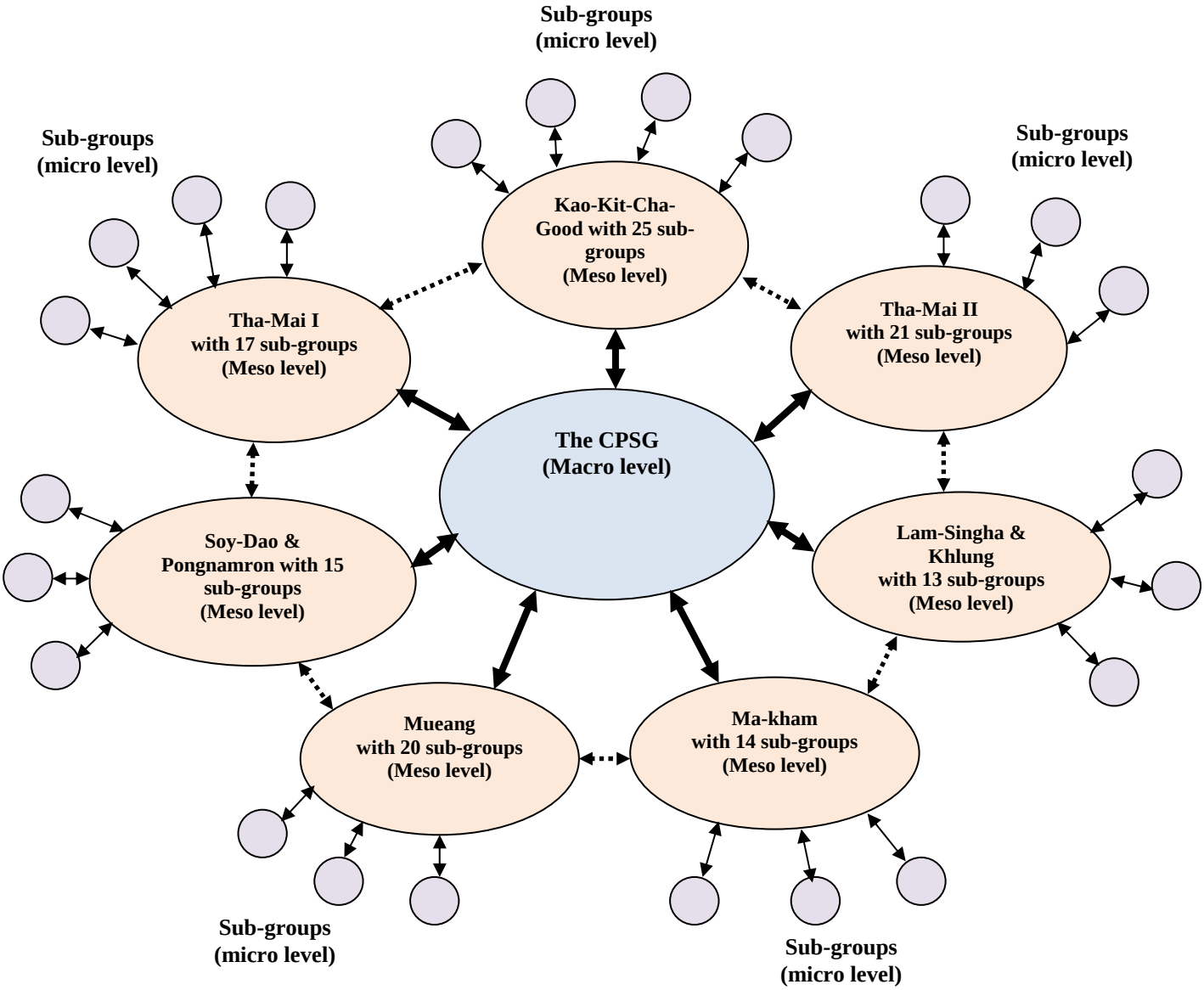
1. To incorporate the ethical aspect into human resource development.
2. To encourage social and economic development and preserve Thai culture and tradition.
3. To encourage way of living that improves community health.
4. To encourage self dependence by establishing community welfare management.

4.3.3 The Chanthaburi Province Savings Group at the present time

Currently, the CPSG comprises of 125 sub-groups scattering around 300 villages in 10 districts, with the members of 60000. The group's working capital account for 700 million Baht, 400 million Baht of which comes from the members' savings deposit while another 300 million is from the accrued returns (*ibid.).* The members' savings deposit will be sent to the group's savings account for the purpose of lending to the group member. For the accrued returns, its main purpose is used for providing the welfare service on behalf of the welfare fund. In addition, if the welfare payment is less than the welfare fund' capital, the excess capital will also be used for lending to the group members.

The group has been structuralized into three levels: micro, meso, and macro. One hundred and twenty five micro-level sub-groups, of which the main obligation is to provide the financial services and welfare to the member directly, are geographically grouped and monitored by seven sections at the meso level, while the CPSG is the first in command. Furnishing the financial services is not the main responsibility of the meso and macro levels, their main task is monitoring and coordinating in the overall level. This organizational structure is shown in figure 6.

[10] Indeed, the savings group model in Thailand can be divided into three main categories: monk-initiated, villager-initiated, and government agency-initiated. In this research, we will solely focus on the monk-initiated savings group.



Source: Khanthithammo (2010)

Figure 6: The organizational structure of the Chanthaburi Province Savings Group

The welfare provision of the savings group is likely to be an innovative means of using the profit since mostly the MFIs' profit will be paid back to the member only in terms of dividend. Presently, the CPSG's welfare provision covers three main aspects: health, death, and education.

- ***Health:*** If a member is admitted to the hospital, the savings group will compensate 100 – 300 Baht per night for 5 nights but not over 30 nights. This can be varied across each sub-group depending on size[11] of the welfare fund of each sub-group.

[11] Numbers of years in operation and members are two important factors affecting size of the welfare fund.

- ***Death:*** If a member is dead, his/her family will obtain the funeral compensation from the savings group of 5,000 – 100000 Baht depending on size of the welfare fund of each sub-group.
- ***Education:*** In the special occasions, such as New Year, Father Day, and Mother Day, the savings group will reward the young members with the scholarship of 100 – 10000 Baht depending on size of the welfare fund of each sub-group.

5 The empirical results

This chapter presents the data collected from the fieldwork through an interview, observation, and the CPSG' documents, including the operation of the CPSG, the lending process of the CPSG, the explanation of a 100 percent repayment rate, and the CPSG's regulations.

5.1 The operation of the Chanthaburi Province Saving Group

According to an interview with PhraManus who is the founder of the CPSG and the committee, the operation of the CPSG has been divided into three levels in accordance with the level of the organizational structure described above: micro, meso, and macro. The operation of all three levels will occur only in the monthly meeting since all committees have their routine works. Excessive meetings will negatively affect their works.

At the macro level, the monthly meeting will comprise of the meso-level committees from seven sections and the macro-level committees, leading by Phramanus as a chairman. The meso committees will report the overall performances and problems of each section. Particularly in case of significant problems, the macro committees and Phramanus will help each area solve the problems. The macro committees will inform the meso committee about the group's policies and information from external organizations. At the meso-level monthly meeting, the micro committees of each section will report its financial performance and problems. Problems that cannot be solved at the micro and meso levels will be brought to the macro level for further discussion. The meso committees have a responsibility to inform the micro committees about the information received from the macro-level meeting.

At the micro level, each sub-group's members have the authority to elect the committees at least 5 people with 1-year tenure, and the micro committees will be subsequently elected to be the committees in the higher level. Their responsibilities are to conduct the savings and lending processes, to make an accounting report, to publicize the information from the meso and macro levels to the members, and to manage the sub-group's welfare fund. At this level, it is worth noting that in the absence of financial support from the government or other organizations like the CPSG, the members' savings is the most essential source of capital. This leads to one of the CPSG' important rules stating that every member must deposit money with 100 Baht to his/her savings account every month. The money from the members' savings accounts will be transferred to the sub-group's savings account, and then will be lent out to those members who want to borrow with the loan interest rate of 12 percent per year. The borrowing members must amortize their loans and interest monthly. Thereby, at the monthly group meeting, the sub-group will obtain the revolving capital from three sources: savings deposit, amortization payments, and interest payments.

At the end of every year, the sum of interest profit gained from lending through the savings account will be divided into two portions: 25 percent and 75 percent. Twenty five percent of the interest profit will be paid back to the members in terms of dividend, and another seventy five percent will be sent to the welfare fund as the capital for welfare provision. Normally, the welfare fund's capital will exceed the welfare payment, or there will be the excess capital. This excess capital will be lent out to the member with the loan interest rate of 12 percent per year, this rate is equal to the lending from the sub-group's savings account. But interest profit gained from lending through the welfare fund will not be paid back to the member; rather, it

will be sent to the welfare fund all. For this reason, the welfare fund of the CPSG has been prospering rapidly. We can draw the financial flow described above as shown in figure 7.

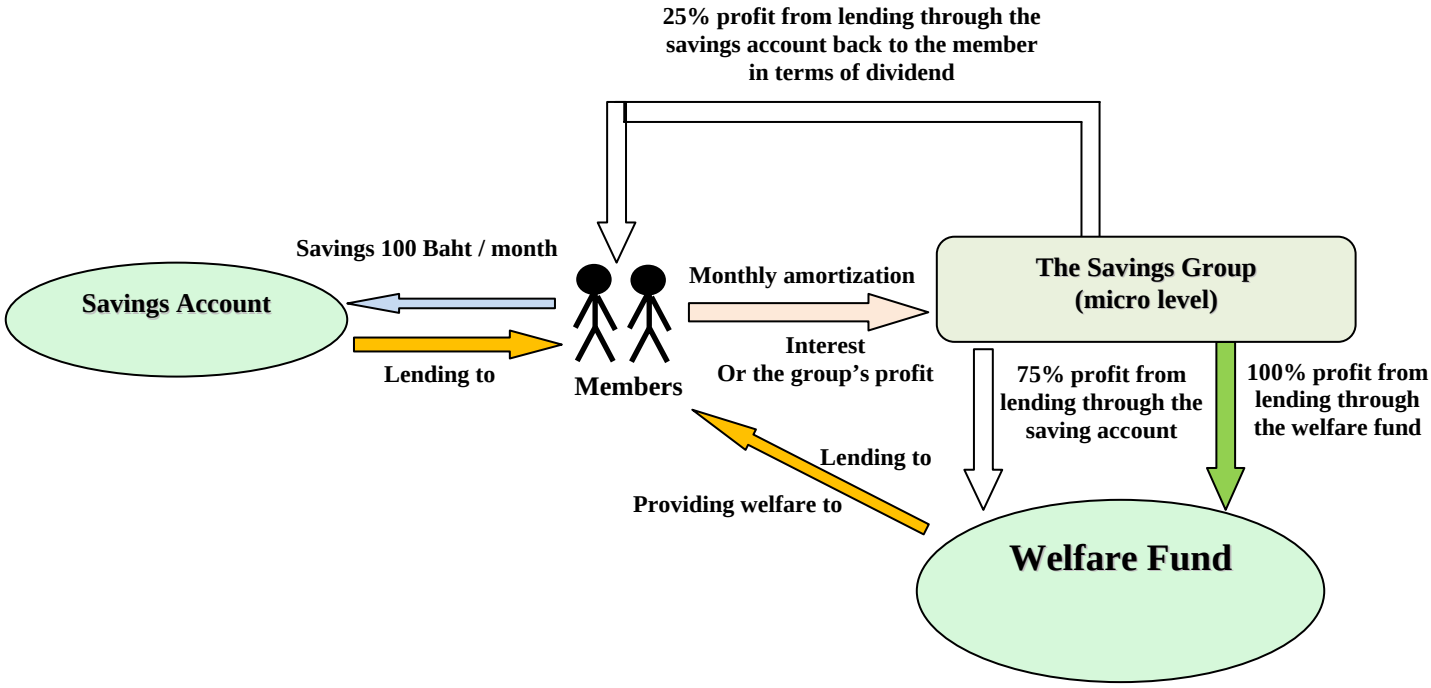


Figure 7: The sub-group's financial flow

5.2 The lending process of the Chanthaburi Province Savings Group

First of all, being a community member does not guarantee that he/she will receive the lending service from the CPSG as the group will provide all services only for the group member. To be eligible for a membership, he/she has to live in a community at least 1 year and take an oath that he/she will put money of 100 Baht into the savings account every month. A new member is required to deposit at least 3 months and 12 months to be eligible for the lending service and welfare service respectively.

After deposit for 3 months, a member who wants to borrow has to sign a loan contract with two sureties who are the group member, in place of pledging any collateral. In the loan contract, the borrower will state the desired amount of loans and monthly principal amortization. Particularly, the amortization must be higher than 500 Baht per month. An interview with the committee found that mostly all three members, a borrower and two sureties, in a borrowing group will guarantee each other in another contract. For example, Mr. A is a borrower and MR. B and Mr. C. are the sureties. If Mr. B turns to be a borrower, Mr. A and Mr. C will be the sureties. And frequently all three members are relatives living in the same family.

The borrower will be charged the interest rate of 1 percent per month or 12 percent per year. This rate is higher than that of the commercial bank with 7 – 8 percent per year (www, Bank of Thailand, 2011). According to an interview with group members, there are three main reasons why they are willing to borrow money from the CPSG despite being charged higher interest rates than the commercial bank. First, the borrower realizes that his/her interest payment will be sent to the welfare fund, and he/she will gain the benefit from this fund in the future. Second, if we consider the monthly savings as collateral, a member who monthly

deposits with 100 Baht for two years (as collateral's value of 24000 Baht) will be eligible to borrow the money of 30000 to 50000 Baht, depending on the highest level of loans of each sub-group. On the other hand, borrowing the same amount of loans from the commercial bank the collateral's value will be higher than the principal. In other words, borrowing an amount of money the CPSG requires the lower collateral value than the commercial bank. Lastly, the lending process of the GPSG is less complicated than which of the commercial banks; hence, the member can easily access to the loan.

At the micro-level monthly meeting, the credit approval process will be conducted by the committee. The committee's responsibility is to check the loan contracts for accuracy, for example, names of the borrower and two sureties, the desired amount of loans and monthly amortization. In particular, the desired amount of loans cannot exceed the funeral compensation since if a borrower is dead, the funeral compensation will be used to repay the dead borrower's loan. Based on an interview with PhraManus, the committee has no right to determine who will acquire the loan since every member has right to borrow money from the group. By doing so, the committee's bias against some members cannot impede them to reach the group's lending service. Moreover, during an observation, the researcher found that if demand for loans exceeds money the sub-group has, all borrowers will make a collective agreement by prioritizing the need of each borrower. But if the borrowers cannot make the agreement, the committee will equally allocate money to all borrowers.

As stated by the micro-level committee, the borrowing purpose can be categorized into two types: occupation and consumption. Since most of the group members are in agricultural sectors, the loan will be used to buy agricultural equipments, for instance, fertilizer, machine and seed. For the consumption purpose, the group member will use the loan to buy home appliances, for instance, televisions, refrigerators, washing machines, cell phones, and so on.

5.3 The explanation of a 100 percent repayment rate

In this part, the researcher aims to clarify the notion of achieving a 100 percent repayment rate of the CPSG by using the delinquency indicators mentioned in the theoretical part. According to an interview with PhraManus and the committee, they claimed that all sub-groups gain **all** principal amortizations and interest payment every month. However, we should bear in mind that gaining all principal amortizations and interest payment every month does not mean all sub-groups have no delinquent/default borrowers since sometimes two sureties of each loan may take responsibility for paying money back instead of them. In other words, employing group-lending contracts with joint liability is the way of transfering the burden of delinquency/defualt from the sub-group to the member.

Gaining all principal amortizations and interest payment every month means that the actual amount collected each month is equal to the expected amount due each month. This is directly associated with the formula of "collection rates". We can draw an equation below.

$$\text{Collection rates} = \frac{\text{Amount collected this period}}{\text{Amount due this period}} = 1 \text{ or } 100\%$$

Therefore, a 100 percent repayment rateof the CPSG is similar to a 100 percent collectin rate. In a sense, a 100 percent collection rate of the CPSG can be related to arrears rates and

PAR_0[12] as shown in the equation below.

$$\text{Arrears rates} = \frac{\text{Late payment}}{\text{Gross loans}} \quad (= 0) = 0\%$$

$$PAR_0 = \frac{\text{Outstanding balance of loans past due}}{\text{Gross loans}} \quad (= 0) = 0\%$$

In conclusion, the 100 percent collection rate of the CPSG are similar to a zero percent arrears rate and a zero percent PAR_0. Particularly, a zero percent PAR rate refers to a circumstance that the CPSG has no outstanding loans with overdue payment; hence, its risk of defaulted loans will be at the low level, not zero because of the unpredictable situation in the future.

5.4 The regulations of the Chanthaburi Province Savings Group

According to the CPSG's documents, delinquency and default are two important aspects stated in the group's regulations. An interview with PhraManus and the committee, the regulations result from the group's resolution which has been refined and adapted over a decade, and they have been adopted by all 125 sub-groups of the CPSG.

The regulations regarding delinquency

There are three regulations dealing with the delinquency problem as follows:

1) In the monthly meeting, if there is a delinquent borrower, the micro-level committee will not lend out the money. Moreover, the surety of the delinquent borrower will be unable to borrow money from the group and/or guarantee other borrowing members. Note that a member can sign the loan guarantee for various members. In this case, two sureties of the delinquent borrower have responsibility to bring the money back since the sureties will be subsequently forced by those members who want to borrow. However, the group members who want to borrow are not allowed to pay a debt instead of a delinquent borrowers.

During an observation, the researcher found that there are two circumstances with regard to the delinquent borrower. First, a delinquent borrower attends the monthly meeting, but he/she is unable to repay. Therefore, two sureties will equally pay instead. The delinquent borrower will repay them afterwards. Mostly, in this case, the borrower and two sureties will be relatives. Second, a delinquent borrower does not present at the meeting, two sureties will pursue the delinquent borrower and then force him/her to repay. This may imply that, in a surety's point of view, not attending the monthly meeting of the delinquent borrower seems to be an intention of missing the repayment; therefore, the surety has to force him/her to repay.

2) The borrower who misses the repayment will be deprived of the borrowing right for one year. After one year of punishment, the borrower will be able to borrow 50 percent of the initial loan contract and must strictly amortize for 1 year. After that, the borrower will be able to borrow 100 percent of the initial loan contract. According to an interview with the committee, sometimes the borrowing members will borrow money from local moneylenders

[12] For the CPSG, a loan with one day late will be categorized as the delinquent loan; hence, the PAR of the CPSG is PAR_0

with interest rates of 10-20 percent per month to repay the group because they do not want to be deprived of the borrowing right.

3) In case of unintended delinquency, the borrower can negotiate with the committee for extending the payment period. Unintended delinquency refers to a situation that the borrower suffers from the unpredictable events, such as the volatility of weather and accidents, which negatively affect the borrower's repayment ability. Extending the repayment period will help the borrower relieve a difficult time. In particular, numbers of group members are in agricultural sectors, they have to face with seasonal risks inevitably. Two frequent natural problems faced by the crofters in Chanthaburi province are flood and drought (www, Chanthaburi Provincial Agricultural Extension Office, 2011).

The regulations regarding default

There are three regulations concerning the default problem as follows:

1) A member who has an outstanding loan or is a surety for other members will be able to resign from the membership as long as the member or his/her signatories pay the outstanding loan and interest. Otherwise the committee has authority to foreclose money in his/her savings account until it covers the outstanding loan and interest. But if the money in his/her accounts is less than the outstanding loan and interest, the committee can foreclose money in his/her family members' savings accounts until it covers the outstanding loan and interest. We will notice that on the one hand the borrowing member may not be required to pledge any physical collateral, but on the other hand, in case of default, his/her savings account will play role as financial collateral. This may imply that obliging the members to deposit every month seems to be the way to implicitly build up financial collateral, and frequently savings behavior is used to distinguish between good borrowers and bad borrowers.

A borrower who is foreclosed money in the savings accoumt will be dismissed from the membership. This is called as involuntary resignation. Resignation from the membership means that the member will not be able to claim on the group's welfare services. Based on an interview with the member, excluding from the group's welfare services is the significant incentive for the member not to resign from the membership. This is consistent with the incentive to borrow money from the group despite being charged higher interest rates than the commercial bank.

2) In case of intended default, the committees and group members will make a resolution to punish the default borrower. Additionally, if two sureties of that default borrower do not repay the loan and interest within 3 months, they will be punished from the group as well. The punishment will appear in the form of a boycott on communication, trade, and so on. In the worst case, if a default borrower moves to a new community, the group committees will inform the new community's leader about the behavior of that default borrower.

3) If a borrowing member is dead – called as unintended default, his/her funeral compensation from the group' welfare fund will be used to repay his/her outstanding loan and interest. As mentioned above, the amount of loans will not exceed the funeral compensation: hence, the dead borrower's relatives will not shoulder the debt.

In conclusion, delinquency regulations and default regulations have been designed to cope with both voluntary and involuntary situations.

6 Analysis and discussion

In this chapter, the researcher aims to address the research question referred in chapter 1 by using the theoretical framework and the empirical data. The research question is

- What are the key factors underlying the CPSG's high repayment rate?

6.1 Key factors underlying high repayment rate achievement

First of all, the researcher would like to give emphasis on the condition leading to high repayment. Theoretically, the agency problem between the lender (principal) and the borrower (agent) is the significant obstacle to attaining high repayment rates. The agency problem caused by informational asymmetries has been divided into three intervals with three problems: before granting loans (adverse selection), after granting loans (moral hazard), and after investment returns have been realized (strategic default). Consequently, to reach a 100 percent repayment rate the lender has to eliminate these problems.

Based on the empirical data, the researcher found that the 100 percent repayment rate of the CPSG has resulted from two key factors: jointly liable group-lending contracts and strong incentives.

Jointly liable group-lending contracts
Theoretically, jointly liable group-lending contracts will help the lender to mitigate three agency problems: adverse selection, moral hazard, and strategic default, and then lead to a high repayment rate. Particularly joint liability is the underlying incentive for all borrowers in a borrowing group to solve these problems.

As for the CPSG, the researcher found that the group-lending scheme has been used to mitigate only the strategic default problem through a high degree of social pressure. There are two reasons why adverse selection and moral hazard have not been solved. First, on the one hand close relationship between the group members will bring about a low level of informational asymmetry which seems to be the key ability to solve adverse selection and moral hazard problems, but on the other hand, close relationship, especially in the form of relatives, may lead to a collusion between the group members to neglect screening and monitoring processes. Often, the group members who are the relatives feel considerate of each other to screen and monitor their relatives' investments. Second, in this study the committees have screening and monitoring competence like the group members since there is no informational asymmetry between the committees (working on behalf of the lender) and the group members[13]. Despite having screening and monitoring competence, the committees are not allowed to do so because all members who can find two sureties to guarantee their loans will be able to obtain the loans. The committees cannot determine who will or will not acquire the loan. Moreover, the borrowing members are allowed to spend their loans on non-income generating activities like consumption, not restricted only to income generating activities (as stated in the empirical results). Neglect of screening and monitoring processes may pose the risk of delinquency/defualt not only to the surety but also to the lender.

[13] In the theory, a low level of informational asymmetries will occur only between the borrowers while in this study it will occur not only between the borrowers but also between the borrowers and the lender (or the committee). A low level of informatioal asymmetries between the committee and the borrowers asises out of the fact that the commitee live in the same community as the group members or they are also the community member like the group members.

For this reason, to ascertain that every sub-group will be paid the money back in case of delinquency and/or default, the CPSG needs to design the group-lending scheme with a very high degree of social pressure through imposing joint responsibility not only on the surety but also on every group member who wants to borrow money. This is presented in the form of one of the regulations which states that if there is a delinquent borrower, the micro-level committee will not lend out the money to other members in that month. We will notice that from this regulation the delinquent borrower and the surety will be enforced by the group member who wants to borrow money. This is different from the group lending with joint liability in the theoretical part i.e., in the theory the responsibility to enforce a delinquent and/or default borrower will only belong to the surety within the borrowing group, and the borrowing member in a borrowing group cannot interfere in other borrowing groups.

Achieving the 100 percent repayment rate or collection rates does not mean the sub-group has no delinquent or default borrowers. Imposing a high level of joint responsibility on the group members who want to borrow will assure the sub-group that the actual amount collected each month will be equal to the expected amount due each month i.e., they will enforce either the borrower or the surety to repay the debt for the purpose of reaching their borrowing rights.

Strong incentives
Apart from enforcing the borrower to repay the loan, the researcher found that the CPSG has also generated an incentive for borrowers to voluntarily repay the loan. As mentioned in the empirical data, a borrower who misses the repayment will be deprived of the borrowing right for one year. Being excluded from the group's lending service will negatively affect group members who are in the agricultural sectors. Since, during a planting period, those who are the farmer or crofter will have a high demand for money to invest in their cultivated areas, being excluded from the group's lending service means they may have to borrow money from local moneylenders with high interest rates to carry on their occupations. Consequently, numbers of borrowing members who are in agricultural sectors will try to avoid missed repayment.

Additionally, the welfare service is an important incentive for the borrowing members to repay debts. As stated in default regulations, in case of a default borrower, the committees have authority to foreclose his/her money in the savings account, including to reimburse the group for the outstanding debt. By doing so, that member will be dismissed from the membership, and he/she will be unable to obtain the group's welfare service. Based on an interview with the group members, they think that the group's welfare services are beneficial to them, particularly a large amount of funeral compensation. The group members stated that their funeral compensations will be the legacy for their descendants. For this reason, they do not want to be excluded from the group's welfare services. Furthermore, the welfare service is also an incentive for borrowing money from the group despite being charged higher interest rates than the commercial bank.

6.2 Discussion

As mentioned above, the CPSG has employed the group-lending scheme to mitigate only the strategic default problem, by neglecting adverse selection and moral hazard problems. By doing so, on the one hand all sub-groups of the CPSG will assure that they can definitely maintain their financial sustainability, but on the other hand, this seems that the CPSG has been shifing the burden of default risk to the members. According to Stiglitz (1990), the borrowers (or the members) are in a worse position to bear default risk than the lender.

Informational advantages of the borrowers do not lead to the capacity for bearing the default risk.

Especially neglect of adverse selection and moral hazard problems, the borrowing member will have a chance of investing in a high risk project without peer supervision[14]. This is different from the theoretical part i.e., in the theory all members in a borrowing group will supervise each other investing in the project with an acceptable risk level for the purpose of preventing involuntary default. In the researcher's point of view, lack of peer supervision will result in a high possibility of involuntary default, such as being unprofitable and less liquid, since high risk projects are most likely to fail. Although the group's regulations have been designed to deal with involuntary default, they have not covered business failure yet. Consequently, if the CPSG's borrowing member faces a business failure problem, he/she will be deteriorated by enforcement of loan repayment. In addition, the borrowing member is allowed to use the loan for non-income generating activities like consumption. This may affect the borrowing member in the same way as involuntary default described earlier.

In conclusion, employing jointly liable group-lending contracts help the CPSG attain a 100 percent repayment rate, but this does not mean **all** borrowing members will have better financial status. Some borrowing members may be deteriorated from this lending scheme as well.

[14] The word "supervision" includes screening and monitoring processes.

7 Conclusions

The aim of this research is to investigate what is the important factors underlying high repayment rate achievement of the CPSG. The last chapter of this study is intending to answer the aim and provide suggestions for future research.

7.1 Findings of the study

There are two critical factors underlying high payment rate achievement of the CPSG: employing jointly liable group-lending contracts and generating strong incentives. Noticeably, the jointly liable group-lending contract has been employed in mitigating only the strategic default problem. The adverse selection and moral hazard have not been soved for two reasons. First, in the Chanthaburi province's social context which a relationship between the villagers is very close, there is a high possibility that the borrowing member will exploit the close relationship between the group members for neglecting screening and monitoring process. Second, although the commitees have screening and monitoring competence, they are not allow to do so. Neglect of adverse selection and moral hazard will pose the risk of delinquency/default not only to the surety but also to the lender. Consequently, to ensure that the group will be paid money back in case of a delinquent or default borrower, the CPSG needs to adopt the group-lending contract with a very high social pressure through imposing joint responsibility on both the surety and those group members who want to borrow money. In other words, both the borrowing member and the surety will be subsequently enforced by those members who want to borrow money.

In addition, the CPSG has generated two significant incentives for borrowers to repay the loan voluntarily. First, depriving the delinquent borrower of the borrowing right for one year has encouraged the borrowing member to repay the loan punctually since being excluding from the group's lending service means he/she has to borrow money from local moneylenders with high interest rate. Second, the default borrower will be dismissed from the membership, and he/she will be unable to obtain the group's welfare services anymore. According to an interview with the group members, receiving the welfare services, particularly the funeral compensation, is the underlying incentive for the members to repay the loan on time.

However, employing jointly liable group-lending contracts seems that the CPAG has been transferring default risk to the borrowing members who are in a worse position to bear default risk than the lender (Stiglitz, 1990). Moreover, the borrowing member whose investment fails may be deteriorated by this lending scheme since he/she has to face the business failure problem and enforcement of loan repayment simultaneously.

7.2 Suggestions for future research

Although the CPSG can achieve a 100 percent repayment rate leading to financial sustainability, it is too early to conclude that the CPSG is the best microfinance model in Thailand. As was stressed in Hamada (2010), apart from financial sustainability aspect, MFIs should also give emphasis on outreach to the poor and making a positive impact. Given this, a suggestion for future research is to measure the level of outreach as well as impact of the CPSG on the borrowing members. Particularly the aspect of the effect on the borrowing members, the possible future research is to investigate the share of repayment made by the borrowing members and/or the sureties.

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